**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1    1.    (Canceled)

1    2.    (Currently amended) The system of claim [[1]] 6, further comprising:

2         a video camera coupled to said computer for providing said video images.

1    3.    (Original) The system of claim 2, further comprising:

2         a video digitization unit couple to said video camera and said computer for converting

3    said video images provided by said video camera from analog to digital format.

1    4.    (Original) The system of claim 3, further comprising:

2         a storage/retrieval unit coupled to said video digitization unit, said video camera, and said

3    computer, for storing video images and standard object video images.

1    5.    (Canceled)

1    6.    (Previously presented) A system comprising:

2         a computer configured to determine a position and shape of an object of interest from

3    video images and to characterize activity of said object of interest based on analysis of changes

4    in said position and said shape over time;

5         wherein said computer includes an object identification and segregation module receiving

6    said video images; and

7    wherein said object identification and segregation module operates using a background

8    subtraction algorithm in which a plurality of said video images are grouped into a set, a standard

9    deviation map of the set of video images is created, a bounding box where a variation is greater

10   than a predetermined threshold is remove from said set of video images, and the set of images

11   less said bounding boxes is averaged to produce a back ground image.

1    7.    (Original) The system of claim 6, wherein said computer further includes a behavior

2    identification module for characterizing activity of said object, said behavior identification

3    module being coupled to said object identification and segregation module.

1    8.    (Original) The system of claim 7, wherein said computer further includes an object

2    tracking module for tracking said object from one frame of said video images to another frame,

3    and an object shape and location change classifier for classifying the activity of said object,

4    coupled to each other, said object identification and segregation module, and said behavior

5    identification module.

1    9.    (Original) The system of claim 8, wherein said computer further includes a standard

2    object behavior storage module that stores information about known behavior of a predetermined

3    standard object for comparing the activity of said object, said standard object behavior storage

4    module being coupled to said behavior identification module, and a standard object classifier

5    module coupled to said standard object behavior module.

1    10.   (Currently amended) The system of claim [[5]]6, wherein said computer further includes

2    a standard object behavior storage module that stores information about known behavior of a

3     predetermined standard object for comparing the activity of said object, said standard object

4     behavior storage module being coupled to said behavior identification module.

1   ~~11~~.     (Currently amended) The system of claim [[1]]~~6~~, wherein said object is a living object.

1   ~~12~~.     (Currently amended) The system of claim [[1]]~~6~~, wherein said object is an animal.

1   ~~13~~.     (Currently amended) The system of claim [[1]]~~6~~, wherein said object is a mouse.

1   ~~14~~.     (Currently amended) The system of claim [[1]]~~6~~, wherein said object is a human.

1   ~~15~~.     (Currently amended) The system of claim [[1]]~~6~~, wherein said object is a man made

2     machine.

1   16-17.  (Canceled)

1   ~~18~~.     (Currently amended) The method of claim [[16]]~~30~~, wherein said foreground object

2     detection includes the step of generating a background image from an average of a set of

3     individual frames of said video images.

1   ~~19~~.     (Original) The method of claim ~~18~~, wherein said step of generating a background image

2     includes the step of determining variation in intensity of pixels within said individual frames to

3     identify a region where said foreground object is located.

1   ~~20~~.     (Original) The method of claim ~~19~~, wherein said step of generating a background image

2     further includes the step of using non-variant pixels of the video images to generate said

3     background image.

1    21.    (Original) The method of claim 20, wherein said step of generating a background image

2    is performed periodically to correct for changes in background objects and small movements of a

3    camera capturing said video images.

1    22.    (Currently amended) The method of claim [[16]]30, wherein said detecting a foreground

2    object includes using a background subtraction method comprising the steps of:

3          multiply frames in a neighborhood of current image;

4          apply a lenient threshold on a difference between a current image and a background so as

5    to determine a broad region of interest;

6          classify by intensity various pixels in said region of interest to obtain said foreground

7    object; and

8          apply edge information to refine contours of said foreground object image.

1    23.    (Currently amended) The method of claim [[16]]30, wherein said step of detecting said

2    foreground includes the step of manual identification of foreground objects to be tracked and

3    characterized.

1    24.    (Currently amended) The method of claim [[17]]30, wherein said posture determination

2    and description includes using statistical and contour-based shape information.

1    25.    (Original) The method of claim 24, wherein said step of identifying and classifying

2    changes to said foreground object includes using statistical shape information selected from the

3    group consisting of:

4          area of the foreground object;

5          centroid of the foreground object;

6       bounding box and its aspect ratio of the foreground object;

7       eccentricity of the foreground object; and

8       a directional orientation of the foreground object relative to an axis as generated with a

9   Principal Component Analysis.

1   26.    (Original) The method of claim 24, wherein said step of identifying and classifying

2   changes to said foreground object uses contour-based shape information selected from the group

3   consisting of b-spline representation, convex hull representation, and corner points.

1   27.    (Original) The method of claim 24, wherein said step of identifying and classifying

2   changes to said foreground object includes identifying a set of model postures and their

3   description information, said set of model postures including horizontal posture, vertical posture,

4   eating posture, or sleeping posture.

1   28.    (Original) The method of claim 27, wherein said step of identifying and classifying

2   changes to said foreground object includes classifying changes to said foreground object includes

3   classifying the statistical and contour-based shape information from a current image to assign a

4   best-matched posture.

1   29.    (Canceled)

1   30.    (Amended)  A method of characterizing activity of an object using a computer

2   comprising:

3       detecting a foreground object of interest in video images;

4       tracking said foreground object over a plurality of said video images;

5       classifying said foreground object in said plurality of video images; and

6   characterizing said activity of said foreground object based on comparison of said

    classifications to activity of a standard object; wherein said characterizing said

8   activity includes:

9   describing a sequence of postures as behavior primitives; and

10  aggregating behavior primitives into actual behavior over a range of images;

11  wherein said describing said behavior primitives further includes:

12  identifying patterns of postures over a sequence of images; and

13  analyzing temporal information selected from the group consisting of direction

14  and magnitude of movement of the centroid, increase and decrease of the

15  eccentricity, increase and decrease of the area, increase and decrease of

16  the aspect ratio of the bounding box, change in the b-spline representation

17  points, change in the convex hull points, and direction and magnitude of

18  corner points.

1   31-32. (Canceled)

1   33.    (Currently amended) The method of claim [[17]]30, wherein the said step of determining

2   actual behavior by aggregating behavior primitives includes the step of analyzing temporal

3   ordering of the primitives, such as using information about a transition from a previous behavior

4   primitive to a next behavior primitive.

1   34.    (Original) The method of claim 33, wherein said temporal analysis is a time-series

2   analysis such as Hidden Markov Model (HMMs).

1   35.    (Original) The method of claim 33, wherein the said step of determining actual behavior

2   includes identifying actual behavior selected from a group consisting of sleeping, eating,

3   roaming around, grooming, and climbing.

36. (Original) A method for background subtraction of a video image, comprising the steps of:

grouping a number of images into a set of video images;

creating a standard deviation map of the grouped images;

removing a bounding box area of said image where variation is above a predetermined threshold to create a partial image; and

combining said partial image with an existing set of partial images by averaging the set of images to generate a complete background image deplete of a desired foreground object.

37. (Original) The method of claim 36, further comprising the step of subtracting said complete background image from a current image so a to obtain said desired foreground object.

38. (Original) The method of claim 36, wherein said steps are repeated periodically to update said complete background package.

39-48 (Canceled)